<u>What is Claimed</u>:

1. A method of indicating the angular position of a rotatable member comprising the steps of:

taking a magnet,

mounting the magnet on a rotatable member,

taking a stator formed of magnetic material,

configuring the stator to direct the magnetic field to form a first angular location of the stator in which the strength of the magnetic field varies with the angular position of the rotatable member and a second angular location of the stator in which the strength of the magnetic field is generally constant and independent of the angular position of the rotatable member,

sensing the magnetic field in the first angular location and providing an electrical output signal proportional to the strength of the field in the first angular location as an indication of the angular position of the rotatable member,

sensing the magnetic field in the second angular location and providing an electrical output signal proportional to the strength of the field in the second angular location as an indication of the decay in the magnetic field of the magnet portions.

2. A method according to claim 1 further comprising the step of compensating the first electrical output signal for decay of the magnet portions by using the second electrical output signal as a correction factor.

3. A method for indicating the position of a magnet movable along a generally circular path between first and second extremities comprising the steps of:

placing a magnetic sensor adjacent to the path in magnetic field coupling relationship with the magnet,

obtaining an electrical output signal from the magnetic sensor dependent on the angular position of the magnet along the path,

using a fresh magnet, taking a sampling of the electrical output signal at a predetermined angular position of the magnet along the path and establishing an expected value of the electrical output at the predetermined angular position,

during normal operation, measuring the electrical output signal at the predetermined angular position of the magnet along the path, and

comparing the measured value of the electrical output signal at the predetermined angular location with the expected value as an indication of the decay of the magnet.

4. A method according to claim 3 in which the step of comparing the measured value of the electrical output signal at the predetermined angular position with the expected value includes providing a correction factor and further comprising compensating the electrical output signal with the correction factor.

5. A method according to claim 4 in which the step of measuring the electrical output of the signal at the predetermined angular position is accomplished using a mechanical switch having a movable contact which moves into engagement with a second contact at the predetermined angular position.

6. A method according to claim 4 in which the measuring step is performed using a Hall Effect sensor.

7. A method according to claim 6 in which the Hall Effect sensor is a switch.

8. A magnetic position sensor comprising:

a stator formed of magnetic material,

a rotatable coupling member mounting first and second magnets for rotation about the stator in magnetic field communicating relationship therewith, the magnets being fixed diametrically opposed to each other and having the poles in reverse orientation relative to each other along the diametrical direction, the magnets being movable along a rotation path between two opposite extremities,

the stator formed of discrete, separated portions having a first air gap in which the magnetic field varies in dependence upon the angular position of the magnet portions,

a first Hall Effect sensor mounted in the first gap having a first electrical output signal corresponding to the angular position of the magnet portions along the rotational path, and

a second Hall Effect sensor having a second electrical output signal fixedly mounted in magnetic field communication relationship with the magnetic field of the magnets at a location at which the magnetic field is generally constant, independent of the angular position of the magnet portions.

9. A position sensor according to claim 8 in which a second air gap is formed in the stator at a location out of alignment with the magnet portions and the second Hall Effect sensor is located in the second gap.

10. A position sensor according to claim 8 in which the rotatable coupling member includes a tubular yoke of magnetic material.

11. A position sensor according to claim 8 further comprising a tubular yoke of magnetic material defining a space in which the rotatable coupling member and stator are received.

12. A position sensor according to claim 11 in which the second Hall Effect sensor is located in an air gap formed between the magnet portions and the tubular yoke.

13. A magnetic position sensor comprising

a stator formed of magnetic material,

a rotatable coupling member mounting first and second magnets for rotation about the stator in magnetic field communicating relationship therewith, the magnets being fixed to the coupling member and diametrically opposed to each other, the poles of the magnets having their poles aligned in reverse orientation relative to one another along the diametric direction, the magnets being movable along a rotation path between two opposite extremities,

the stator formed of discrete, separated portions having a first air gap in which the magnetic field varies in dependence upon the angular position of the magnet portions,

a first Hall Effect sensor mounted in the first gap having a first electrical output signal corresponding to the angular position of the magnet portions along the rotational path, and

a switch being actuatable at a preselected angular position of the magnet to provide a known reference position at which the first electrical output signal can be compared to an expected gauss value.

14. A position sensor according to claim 13 in which the switch includes a first movable contact movable into and out of engagement with a second contact and a protrusion is formed on the periphery of the rotatable coupling member at the preselected angular position for biasing the first movable contact into engagement with the second contact when the rotatable coupling member is turned to the said preselected angular position.

15. A position sensor comprising:

a stationary tubular shaped yoke formed of magnetic material,

a rotatable coupling member having a center of rotation,

first and second movable, arcuately shaped magnets mounted in fixed, diametrically opposed relation to each other on the coupling member and being disposed within and being evenly spaced from the tubular shaped yoke, the magnets each having one side facing toward the yoke and another side facing toward a center of rotation of the coupling member,

first and second stator elements formed of magnetic material, each stator element having an arcuately shaped outer periphery radially spaced from a respective arcuately shaped magnet on the side of the magnet facing the center of rotation, first and second stator elements being spaced from one another forming a first air gap,

the coupling member rotatable to move the magnets between first and second extremities in an open space between the yoke and the stator elements,

a first Hall Effect sensor having a first electrical output disposed in the first air gap exposed to magnetic flux which varies with the rotatable position of the magnets and a second Hall Effect sensor having a second electrical output disposed in a location at which the magnetic flux which is essentially independent of the position of the magnets.

16. A position sensor according to claim 15 in which the second Hall Effect sensor is disposed between the yoke and a magnet in spaced apart relation thereto.

17. A position sensor according to claim 15 in which the tubular shaped yoke is split into first and second spaced apart yoke portions defining a second air gap between the spaced apart yoke portions and the second Hall Effect sensor is disposed in the second air gap.